CDC & ATSDR MICROCOMPUTER AND LAN STANDARDS/GUIDELINES

January 2001 (Updated)

These standards are a continuing evolution of CDC and ATSDR's IRM technology strategy for capitalizing on the most advanced information processing capabilities available in the marketplace while providing a secure, stable, and maintainable environment for all information workers. The standards and guidelines apply to new acquisitions. The standards include particular equipment and software for unique environments such as laboratories and to meet special statistical and scientific processing needs. Integrations with other nonscientific environments continue to be a paramount concern to ensure intercommunication, data sharing, effectiveness, and efficiency in meeting CDC's mission.

General Comments

The IRM Coordinators conduct a formal six-month review of these standards, in coordination with CIO scientific and administrative staff as required. In addition, the IRM Coordinators will consider requests for product research and development anytime. The decision to undertake a formal, IRM Coordinator-sponsored evaluation, will be by majority vote of the IRM Coordinators. Interested parties in the CIOs will do the evaluation (or IRMO, if appropriate) under the general oversight, coordination, and, whenever possible, funding by IRMO, upon space and financial availability.

Training for Level I and Level II products will be provided by the Employee Training and Career Development Branch, Human Resources Management Office (HRMO), after adequate notification by the IRM Coordinators or IRMO, and upon space and financial availability.

Level I products are considered CDC core products (hardware and software) that are deployed to virtually every desktop at CDC or throughout the CDC-NET. The hardware "Funding Source" column and software "License Status" table provide additional information. The Level I products are focused to ensure CDC-wide interoperability and the ability to centrally provide adequate and efficient support by IRMO or its contractors.

Level II products are limited to standard products that are widely deployed in multiple CIOs. The ordering CDC organization funds Level II purchases. IRMO or its contractors support these products centrally at CDC.

Level III products will not be supported centrally at CDC by IRMO or its

contractors. If additional support is required, it will be acquired by the organization from the original vendor, manufacturer, or other source.

Except where noted, software versions are not listed. The most current commercially available version is the standard for Level I and Level II products. The current standard and last version of the software package will be centrally supported. Those software packages that list a version number are considered critical to CDC interoperability. These software packages go through a formal evaluation, testing and certification process at CDC before a new version is endorsed and added to the standard's list. Therefore, new versions of these software products should not be acquired or used on production LANs or PCS until the IRM Coordinators have approved them.

It is recommended that plug and play devices or devices which have automatic configuration capabilities are purchased for implementation CDC-wide.

Hardware no longer listed in these standards but purchased during the period in which it was on the standard's list, will continue to be supported until it is no longer economically feasible to repair because of advances in technology price, performance or parts obsolescence.

Software no longer listed in these standards but purchased during the period in which it was on the standard's list, will continue to be supported until it is removed from Appendix A of this document.

On April 21, 1993, President Clinton signed an Executive Order that required: 1) all Federal government acquisitions of microcomputers including monitors, and printers, must meet EPA Energy Star requirements for energy efficiency, 2) that all acquisitions for microcomputers include the energy efficient low-power standby feature as defined by the EPA Energy Star computer program, 3) agencies shall ensure that Federal users are made aware of the significant economic and environmental benefits of the energy efficient low-power standby feature.

These CDC & ATSDR Microcomputer and LAN Standards/Guidelines will continually be modified to adhere to these requirements.

Funding

Level I

Source

Hardware

1. Network Cabling

IRMO Category 5 UTP 100Mbps Copper Wiring Infrastructure

Category 5 wiring is the standard for wiring at CDC. Category 5 is to be installed for all locations that are newly occupied as well as any major building renovation that requires additional wiring entailing substantial disruption or reconfiguration of existing Type 1 cabling. Furthermore the CDC legacy-based Type 1 cable structure (historically oriented to Token Ring) will no longer be installed unless there are technical, financial or physical constraints that mandate its use. This effectively removes the prior restraints on Category 5 'spot' wiring if there is adequate space in wire closets to support its installation as well as reasonable and logistical ability to install Category 5. IRMO will consult with the CIO occupying space in cases where utilization of Category 5 appears not to be in the best interest of CDC.

Existing Type 1 wiring is prevalent in older CDC leased and permanently occupied sites. There are compelling reasons to utilize it in cases where it is practical and cost effective. If unused Type 1 wiring is easily available and Category 5 is not, then the Type I should be used. Type I wiring has a proven and demonstrable ability to support 100Mbps Ethernet devices and is currently doing so at many CDC locations. The manner to do this is to implement Category 5 baluns. The cost of baluns is much less than the disruption, loss of productivity, time consuming constraints and financial costs of a building or campus rewiring project. Large scale rewiring of the currently occupied CDC space from existing Type 1 cable plants will be a major initiative and should be done in a manner that is consistent with CDC's long term strategic goals.

IRMO Fiber Infrastructure

Networking fiber infrastructure is required and utilized where copper cabling is not feasible due to the inherent physical advantages of fiber optic cabling. This includes distance limitations where signal loss, latency etc. affect copper wiring. In some cases the high-speed of transmission that is meeting or exceeding 1Gbps data-rates mandate the use of fiber to interface devices such as switches. At present CDC utilizes multimode 62.5 micron fiber for most intra-building implementations and for many campus inter-building architectures. The use of single-mode fiber is also an option if technical aspects of distance, high data rate preclude the use of multi-mode fiber. IRMO will coordinate installation of fiber plants based on CIO requirements. Hardware equipment and device acquisitions requiring fiber connectivity should be carefully considered such that the proper fiber interfaces, connection cables and fiber plant

are available to utilize the equipment.

Funding

Level I

Source

Hardware

CIO *Baluns for use in 10/100Base-T with existing Type 1 STP wiring

CIO *Network connectivity devices including NICs, hubs, switches and concentrators that are detailed in the IRM Standards Hardware Section.

2. Network Backbone Interface Cards

CIO Intel PCI 10/100 Ethernet Adapter

CIO 3Com PCI 10/100 Ethernet Adapter

3. WAN Bridges, Routers, Switches, Hubs and Remote Access

CIO CISCO (IRMO will assist in management/co-management, design and configuration as corporate resources.)

CIO CISCO Remote Access Server

4. WAN Multiplexers/Switches

IRMO Marconi ATM Switch Network

5. FAX Boards

IRMO Brooktrout

CIO 6. Wireless Handheld

BlackBerry (RIM)

Level I Hardware Note

If a CIO or a Division relocates, it will be at the discretion of the CIO to relinquish and leave behind, (to be reused, excessed, etc.) all network property that has been procured directly by that CIO. More specifically, property which belongs to a CIO by custodial assignment and is maintained

by that CIO. It is in the spirit of cooperation that if a disagreement exists, it be worked out amicably.

In cases where a CIO relocates and the existing network infrastructure had been procured via special funding, i.e., "move funds" or by IRMO directly, any decisions on its best use will be determined by IRMO on a case-by-case basis.

Funding

Level I

Source

Software

1. Network File and Print

CIO Novell NetWare 5.x

2. Network Directory Services

CIO Microsoft Windows NT Server

(Approved for SQL servers, Exchange servers Internet/Intranet servers, Windows NT Terminal Server)

- o Infrastructure Server (DHCP, DNS, etc.)

CIO Microsoft

CIO Novell

4. Network Clients

CIO TCP/IP Microsoft Networking Client

CIO Novell IntranetWare Client 4.71e with Service Pack 2 for Windows NT

5. Workstation Operating System/Graphical User Interface

CIO Microsoft Windows 2000 Professional w/ Service Pack 1

(New machines arriving at CDC with Windows 2000 Professional are required to be reinstalled with the non-serialized DHHS licensed copy of Windows 2000 Professional and have Service Pack 1 applied)

(The IRM Coordinators have determined that Microsoft Windows 98/ME will not be implemented at CDC.)

CIO Microsoft Windows NT 4.0

Funding
Level I

Source
Software

6. Mail & Scheduling Software

CIO Microsoft Exchange 5.5 (Enterprise Edition)

CIO Outlook 2000 (128-bit encryption)

CIO Outlook Calendar

7. Word Processing

CIO Microsoft Word

(Corel WordPerfect is the CDC/ATSDR standard for document exchange within CDC/ATSDR and HHS. Use of Microsoft Word for document exchange should occur only if the receiving party has agreed to using the Word format.)

CIO Corel WordPerfect 2000/9

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8. Spreadsheets

CIO Microsoft Excel 2000

9. Virus Protection

CIO Norton AntiVirus (Workstations)

CIO Network Associates McAfee (Servers)

IRMO Sybari Antigen for Exchange (Exchange servers and gateways)

10. Graphics

CIO CorelDraw 9

11. FAX Software

IRMO RightFAX

Funding
Level I

Source
Software

12. Client/Server Development

CIO Powerbuilder 7.x

13. Database Engines

CIO Microsoft SQL Server

14. Document Management

IRMO BASIS 8.x

15. Backbone Mainframe Gateway Access Software

IRMO BlueZone

16. Router Software

CIO CISCO IOS 12.x or greater

17. Statistics

IRMO *SAS 6.12 & 8.1

CIO *SAS(Unix) 6.12 & 8.1

OD *StatXact 4.0

OD *LogXact 4.0

OD *Spida 6.0

IRMO *SUDAAN 7.5.6

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*End user technical assistance not supported under the CDC Microcomputer Support Services contract.

Funding

Level I

Source

Software

18. Security

IRMO Network Based Intrusion Detection (ISS RealSecure)

IRMO Host Based Intrusion Detection (Axent Intruder Alert)

IRMO Network Based Vulnerability Analysis (Network Associates CyberCop and ISS NetScanner)

IRMO Host Based Vulnerability Analysis (Kane Security Analyst)

(NT and NetWare)

IRMO PC Security & File Encryption (RSA SecurPC/Keon)

IRMO Token Based Authentication (ACE/Servers, maintenance/upgrade)

IRMO Checkpoint Firewall-1 4.x

IRMO VPN (Secure Remote and Secure Client)

CIO Key Fobs, SoftIDs, & Palm Pilot Ids

IRMO BlackIce

IRMO PKI Services (VeriSign signed CDC branded digital certificates)

19. Internet Broadcast Video

IRMO Real Networks Real Video

20. Intranet Broadcast Video

CIO IPTV

21. Web Browser

CIO Netscape 4.5 or greater (128-bit encryption)

CIO Microsoft Internet Explorer 4.01 or higher (128-bit encryption)

Funding
Level I

Source
Software

22. Web Development

CIO Microsoft FrontPage 2000

CIO SilverStream

23. Web Information/Internet Application Server

CIO Netscape Enterprise Server

CIO Microsoft Internet Information Server (IIS)

24. Miscellaneous Utilities

Adobe Acrobat Reader

CIO WinZip

CIO DBMS/Copy for Windows 6.0

CIO Quick View Plus

CIO Norton Ghost for Windows

License Status for Level I Software

Software	Site/Volume Licensed	Concurrent or Nonconcurrent
Novell Software	Site	Nonconcurrent

MS Exchange	Site	Nonconcurrent
MS Outlook Calendar	Site	Nonconcurrent
MS Outlook Clients	Site	Nonconcurrent
Quick View Plus	Site	Concurrent
WinZip	Site	Nonconcurrent
SAS	Volume	Nonconcurrent
SAS (UNIX)	Volume	Nonconcurrent
StatXact	Volume	Nonconcurrent
LogXact	Volume	Nonconcurrent
Spida	Site	Nonconcurrent
SUDAAN	Volume	Nonconcurrent
Norton AntiVirus	Site	Nonconcurrent
Network Associates McAfee	Site	Nonconcurrent
Netscape	Site	Concurrent
MS Internet Explorer	Site	Nonconcurrent
Corel WordPerfect	Site	Concurrent
CorelDraw	Volume	Nonconcurrent
MS Windows 2000 Professional	Site	Nonconcurrent
MS Windows NT (Workstation/Server)	Site	Nonconcurrent
MS Excel	Site	Nonconcurrent
Powerbuilder	Volume	Nonconcurrent
Sybari Antigen for Exchange	Site	Nonconcurrent
BlackIce	Volume	Nonconcurrent
Norton Ghost for Windows	Site	Nonconcurrent

Level II

Hardware

1. Workstation

Given the current direction of the PC industry and CDC toward graphical user interfaces and multitasking, the minimum workstation recommended at CDC should have at least a Pentium processor running at 650MHz, 192MB memory, 10GB hard disk, and CD ROM. It is recommended that new purchases be of the highest technological level available within the budgetary limits of the funding CIO.

Compaq

Dell

Macintosh (Scientific and Graphical environments)

SUN (Network Management, Scientific, Statistical, Laboratory environments)

2. Workstation Monitors

The current trend toward graphical users interfaces dictates that the lowest graphics resolution acceptable for a CDC workstation should be SVGA. All monitors purchased should be "Low Emission" models. It is recommended that new purchases be at minimum 17 inch models.

Compaq

Dell

NEC

Sony

SUN (Network Management, Scientific, Statistical, Laboratory environments)

3. Laptops/Notebook Computers

The minimum configuration recommended is a Pentium processor running at 300 MHz, 128MB memory, 6.4GB hard disk and CD ROM capable. It is recommended that new purchases be of the highest technological level available within the budgetary limits of the funding CIO.

Compaq

Dell

IBM

Sony

Toshiba

4. Laptop Printers

Canon Bubble Jet

Hewlett Packard

5. Printers

Hewlett Packard

Canon

Laser Master (ColorSpan)

QMS (Laser Only)

Tektronix Phaser

Xerox

6. Network Interface Cards

Intel PCI 10/100 Ethernet Adapter

3Com PCI 10/100 Ethernet Adapter

PCMCIA (For supported brands - laptops/notebooks only)

7. Servers

Servers provide Directory Services, shared disk space and shared printing. Measures to ensure availability and reliability of these services are critical. Current NetWare servers rely on continual availability of Novell Directory Services (NDS) to authenticate users rights to resources.

The NDS database on each server is stored on the SYS: volume. Therefore it should be protected from data loss and becoming completely full. If the SYS: volume becomes completely full the file servers transaction tracking file system must stop and will halt the server until space is made available.

As a minimum the following two recommendations should be followed. Potential for data loss should be reduced by disk mirroring or RAID 5. Potential for filling of the SYS: volume should be reduced by storing all user data on additional volumes.

8. NetWare/Exchange Servers

Compaq

Dell

9. Print Server

Intel Netport

Hewlett Packard

10. Remote Access Servers

Cisco Remote Access Server

11. Scientific Servers

SUN

12. Server/Workstation Tape Backup

DLT (Digital Linear Tape)

13. Media Converters

Allied Telesyn Media Converters

14. Modems (Dial-Out ONLY or Laptops)

ITU Standard 56k Modem

3Com (US Robotics) V.90

15. Digitizers

Howtek (Scientific, statistical, laboratory environments)

Wacom

16. Scanners

Fujitsu

Hewlett Packard

Sharp

Xerox

Level II

Software

1. Server Operating Systems

UNIX (SUN and SGI - Scientific, statistical, laboratory environments)

2. Workstation Operating System

Macintosh (Scientific & Graphics environments)

UNIX (SUN- Scientific, Statistical, laboratory environments)

3. Server/Workstation Tape Backup Software

Computer Associates ARCserve

Veritas Backup Exec

4. Protocol Stacks

Microsoft TCP/IP

Novell TCP/IP

5. Communications

Microsoft Windows Dial-Up Networking Component

6. Remote LAN Communications/Modem Pools

MetaFrame/Windows NT Terminal Server

7. Graphics - Office

Microsoft PowerPoint

Microsoft Word

Microsoft Excel

Microsoft Publisher

Corel WordPerfect

Harvard Graphics

Lotus Freelance

8. Graphics - Pre-Press ONLY

QuarkXpress

Adobe PageMaker

Adobe InDesign

Adobe Illustrator

Adobe Photoshop

Macromedia Freehand

9. Graphics - Presentation

Harvard Graphics

Hijaak Pro for Windows

Lotus Freelance

Corel Presentations

Microsoft PowerPoint

10. Applications Development

Microsoft Visual Studio

11. Database Engines

Microsoft Access

Sybase

12. Desktop Management

NetWare ZENWorks

System Management Server (SMS)

13. Project Management

Microsoft Project

14. Electronic Forms (Official Forms)

Adobe Acrobat Business Tools

15. Help Desk

Network Associates Magic Help Desk SupportMagic

16. Computer Aided Design

AutoCAD

Microsoft Visio

17. Statistics

*Epi Info/Epi Map

*S-Plus

*SPSS/PC

18. Unix Connectivity

PC Xware

Hummingbird Exceed

19. Miscellaneous Utilities

Norton (any)

*End user technical assistance not supported under the CDC Microcomputer Support Services contract.

Level III

All other acquisitions should be compatible with CDC's LAN & WAN architecture and standards. In addition, support, repair, maintenance, compatibility, and other factors should be considered for any acquisition not in compliance with Levels I or II. Exceptions would include CIO-specific software products developed for scientific and administrative use and specialized scientific workstations required to interface with automated laboratory equipment. In the event Level III (or any other) hardware or software causes a backbone failure, the offending product or LAN will be immediately removed from the backbone.

Appendix A

Software no longer listed in these standards but purchased during the period in which it was on the standard's list, will continue to be supported until it is removed from Appendix A.

	Date When Software Last Appeared on Standards List
Level I - Software	
Novell SNA WS LAN Workstation Software 1.2	December 1998
Novell SNA Gateway Server 1.3G	December 1998
Corel WordPerfect 6/7	December 1998
FSLogin	December 1998
CorelDraw 7	December 1998
Outlook Exchange Server Edition for Windows 3.x	June 1999
Novell Multi Protocol Router 2.0	June 1999
DocView	June 1999
Outlook 97	January 2000
Microsoft NetShow	January 2000
Novell NetWare 4.11	June 2000
Outlook 98 (128-bit encryption)	June 2000
Dynacomm 3.60	June 2000
Novell SAA Gateway Server 3.x	June 2000
Corel WordPerfect 8	June 2000
Microsoft Windows 95	June 2000
Microsoft Excel 98	June 2000
CorelDraw 8	June 2000
PKWARE Utilities	June 2000

	Date When Software Last Appeared on Standards List
Level II - Software	
Novell LAN Workgroup	December 1998
FoxPro	December 1998
ProComm Plus	December 1998
ReachOut	December 1998
TimeLine Project Manager	December 1998
Microsoft Visual Basic Professional	June 1999
pcAnywhere	June 1999
RAS	June 1999
Lotus 1-2-3	June 1999
NetWare NFS Gateway	June 1999

NetWare NFS (Network File System)	June 1999
Novell Nprinter	June 1999
SUN NEWSPRINT	June 1999
Paradox	January 2000
Smarterm	January 2000
Corel Ventura Publisher	January 2000
JetForm	June 2000
Microsoft IPX/SPX Stacks	June 2000
Novell IPX/SPX Stacks	June 2000
Legato Networker	June 2000
Microsoft Visual Interdev	June 2000
Microsoft Visual C++	June 2000

Level I Hardware	Date When Hardware Last Appeared on Standards List
IBM Multi station Access Unit (MAU)	June 1999
Synoptics Concentrators	June 1999
Synoptics Fiber Modems	June 1999
Compaq 32-bit EISA	June 1999
Compaq 32 bit PCI	January 2000
IBM 16/4 Token-Ring Adapter	January 2000
Olicom 16/4 Token-Ring Adapter	January 2000
FDDI/CDDI Adapter	January 2000
Netgear PCI 10/100 Ethernet Adapter	June 2000
Racal-Datacom Omni Mux 9000	June 2000

Level II Hardware	Date When Hardware Last Appeared on Standards List
SUN Laser Printers	June 1999
Compaq 32 bit Netelligent Card	January 2000
FDDI/CDDI Adapter	January 2000
IBM 16/4 Token-Ring Adapter	January 2000
Olicom 16/4 Token-Ring Adapter	January 2000
Xircom Token Ring Adapter	January 2000
Micro Design(Networkable CD ROM Drives Category)	January 2000
Toshiba (Networkable CD ROM Drives Category)	January 2000
Hitachi (Networkable CD ROM Drives	January 2000

Category)
SUN (Scientific, statistical, laboratory . . . . . January 2000
equipment) (Optical Drives Category)
Hewlett Packard Jukebox (Optical Drives) . . . . . January 2000
Micro Design (SCSI Express) (Optical Drives . . . . . January 2000
Category)
Pinnacle (Optical Drives Category) . . . . . January 2000
Storage Dimensions (Optical Drives . . . . . January 2000
Category)
ATI . . . . . June 2000
Diamond Stealth Viper . . . . . June 2000
Matrox Millenia . . . . . June 2000
Macintosh Laptops/Notebooks . . . . . June 2000
Netgear PCI 10/100 Ethernet Adapter . . . . . June 2000
American Power . . . . . June 2000
Best Power . . . . . June 2000
Compaq Rack Mount for Rackmounted Servers . . . . . June 2000
Tripp Lite . . . . . June 2000
Curtis . . . . . June 2000
Kennsington . . . . . June 2000
Proxima . . . . . June 2000